

22

ART 24 AMDT

a CLAIMS: What is claimed is:

1. A method of handing off a mobile station from an internal cellular communications network to an external cellular communications network having a network controller, the method comprising:

allocating at least one cell of the internal cellular network as a border cell;

detecting the movement of said mobile station into said border cell;

generating an advance hand-off request in accordance with a prediction algorithm which uses a set of predetermined parameters associates with said mobile station and determines when a hand-off is likely to be required; and

response to said advance hand-off request setting up a communications channel in the external cellular communications network for use by said mobile station when an actual hand-off request is made,

wherein said external network is a mobile communications network and said internal network is a packet switched network and said internal cellular network transmits and receives a plurality of signals using the same communication standard for radio frequency communication as said external cellular network.

2. A method according to claim 1, wherein said network controller implements hand-off to said communication response to an actual hand-off request.

3. A method according to any preceding claims, wherein said mobile station is in communication with a base transceiver station in the internal cellular communications network prior to hand-off.

4. A method according to claim 3, wherein said predetermined parameters for use by said prediction algorithm includes timing

ART 34 AMEND

23

advance information reported from the base station to the mobile station.

5. A method according to any preceding claim, wherein the internal cellular communications network comprises an internal network controller which carries out the prediction and issues said hand-off advance request.

6. A method according to claim 5, wherein said hand-off advance request is issued in packet format via a packet communication path from the internal network controller to said network controller of said external network.

7. A network controller for use in an internal cellular communications network, said internal network is a packet switched network and comprises a plurality of cells and including at least one border cell, said at least one border cell being adjacent cells of an external mobile cellular communications network having an external network controller, the internal network controller comprising:

means for detecting the movement of said mobile station into said border cell;

means for selectively issuing a hand-off advance request advising said network controller of said external network that a hand-off is likely to be required in accordance with a predetermined algorithm which uses a set of predetermined parameters associated with said mobile station; and

means for setting up a communication channel in the external communications network for use by said mobile station when an actual hand-off request is made,

said internal cellular network transmits and receives a plurality of signals using the same communication standard for radio frequency communication as said external cellular network.

24

8. An internal cellular network controller according to claim 7, comprising a base transceiver station operable to set up an RF communication channel with said mobile station.

9. A network controller according to claim 7 or 8, wherein said external network controller is in communication with said internal network controller by a packet communication path for transmission of said hand-off advance request.

10